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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/733,630

12/11/2003

Giora Biran

FIS920030278US1

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06/15/2006

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EXAMINER

NGUYEN, QUANG N

ART UNIT

PAPER NUMBER

2141

DATE MAILED: 06/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/733,630

Applicant(s)

BIRAN ET AL.

Examiner

Quang N. Nguyen

Art Unit

2141

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Detailed Action

1. This Office Action is in response to the Pre-Appeal Brief Conference Request filed on 02/13/2006. Claims 1-20 are presented for examination.

Claim Objections

2. Claim 4 is objected to because of the following informalities:

On line 2 of claim 4: "even where ..." should be "even where when ...".

Appropriate correction is required.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. **Claim 14 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.**

5. Claim 14 is not limited to tangible embodiments. The claim recited "A computer program product comprising a computer useable medium ..." is nonstatutory since "computer useable medium" could broadly include "transmission-type medium such as

digital and analog communications links, wired or wireless communications links using transmission forms such as, for example, radio frequency and light wave transmissions". As such, the claim is not limited to statutory subject matter and is therefore nonstatutory.

To overcome this type of 101 rejection, Examiner respectfully suggests Applicants to amend the claim to include "computer readable storage medium" to store computer readable program code (for example, the claim should be amended as "A computer program product comprising a computer readable storage medium having computer readable program code embodied therein for ...") see MPEP 2105, section IV.

-- DETERMINE WHETHER THE CLAIMED INVENTION COMPLIES WITH 35 U.S.C. 101 – under subsection 1. Nonstatutory subject matter.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pazos (US 2005/0068896 A1), in view of Elzur (US 2003/0172342 A1).**

8. As to claim 1, **Pazos** teaches a system and method for transmission control protocol (TCP) acceleration, comprising:

generating a first duplicate TCP acknowledgement (Ack) covering a received TCP segment that is determined to be valid by TCP (*a TCP receiver issues a duplicate ACK whenever an out-of-order segment arrives and if packets are not lost, but are simply received out-of-order, some duplicate ACKs will result*); and

transmitting the first duplicate TCP Ack (**Pazos, paragraph [0007]**).

However, **Pazos** does not explicitly teach that the received TCP segment that is determined to be valid by TCP and was dropped based on an upper layer protocol (ULP) decision.

In an analogous art, **Elzur** teaches a system and method for identifying upper layer protocol (ULP) message boundaries, wherein a TCP frame 50 sent by a transmitter 10 may be received in-order or out-of-order (*i.e., the received TCP segment that is determined to be valid by TCP*) by the receiver 30, which may compute the CRC (in step 290) and determine whether the CRC is valid. In query 300, if the CRC does not match per check done by the receiver 30, then in query 360, if the framing layer CRC checking takes place before the TCP layer processing is done, then in step 380, the receiver 30 may silently drop the TCP segment (*i.e., the received TCP segment was dropped based on the result of CRC check, hence, based on an upper layer protocol ULP decision*) and allow the TCP layer recovery mechanism to retransmit it (**Elzur, paragraph [0050]**).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teachings of **Pazos** and **Elzur** to include dropping the received TCP segment based on an upper layer (ULP) decision since such methods were conventionally employed in the art to allow the system to reduce or eliminate the need to add error recovery mechanism in the framing layer, while allowing the framing layer to enjoy the increased integrity of payload protected by CRC (**Elzur, paragraph [0050]**).

9. As to claim 2, **Pazos-Elzur** teaches the method of claim 1, wherein the ULP includes at least one of: a marker with protocol data unit alignment (MPA) protocol, a direct data placement (DDP) protocol, and a remote direct memory access (RDMA) protocol (*the upper layer (UL) may form a ULP packet by placing ULP control information or ULP data unit (ULPDU) as a payload for the Lower Layer Protocol such as RDMA/DDP and the RDMA/DDP PDU may be placed into a framing PDU*) (**Elzur, paragraph [0021]**).

10. As to claim 3, **Pazos-Elzur** teaches the method of claim 1, wherein the first duplicate TCP Ack is generated for a TCP segment regardless of whether the TCP segment is in-order or out-of-order (*a TCP receiver issues a duplicate ACK whenever an out-of-order segment arrives*) (**Pazos, paragraph [0007]**).

11. As to claim 4, **Pazos-Elzur** teaches the method of claim 1, wherein the first duplicate TCP Ack is generated even when a next in-order TCP segment has not been received (*all packets received after a lost or out-of-order packet will trigger duplicate ACKs*) (**Pazos, paragraph [0007]**).

12. As to claims 5-6, Pazos-Elzur teaches the method of claim 1, further comprising the steps of generating and transmitting a second duplicate TCP Ack covering a next out-of-order received TCP segment (*all packets received after a lost or out-of-order packet will trigger duplicate ACKs*) (**Pazos, paragraph [0007]**).

13. Claims 7-13 are corresponding system claims of method claims 1-6; therefore, they are rejected under the same rationale.

14. Claims 14-20 are corresponding computer program product claims of method claims 1-6; therefore, they are rejected under the same rationale.

15. Applicant's arguments as well as request for reconsideration filed on 02/13/2006 have been fully considered but they are moot in view of the new ground(s) of rejection.

16. A shortened statutory period for reply to this action is set to expire THREE (3) months from the mailing date of this communication. See 37 CFR 1.134.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quang N. Nguyen whose telephone number is (571) 272-3886.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's SPE, Rupal Dharia, can be reached at (571) 272-3880. The fax phone number for the organization is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



RUPAL DHARIA
SUPERVISORY PATENT EXAMINER